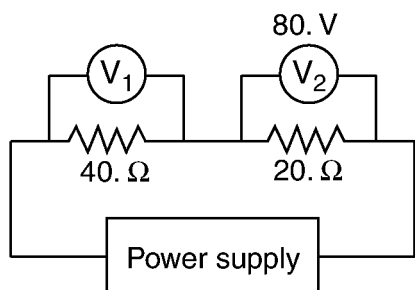


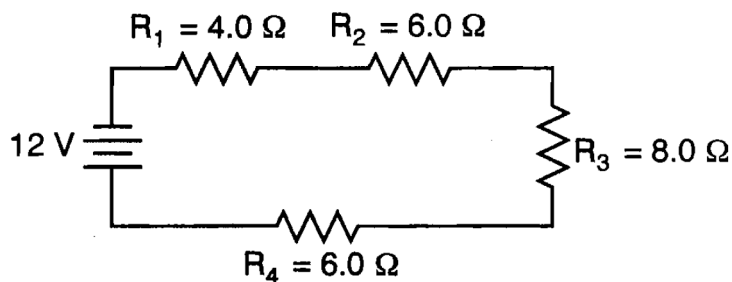
Series & Parallel Practice

1. A student needs a 4-ohm resistor to complete a circuit. Only a large quantity of 1-ohm resistors are available. Which of the following should be done to complete the circuit?
 - 1) Connect four 1-ohm resistors in series.
 - 2) Connect four 1-ohm resistors in parallel.
 - 3) Connect two of the 1-ohm resistors in series and two in parallel.
 - 4) Connect only two 1-ohm resistors in parallel.
2. A 2.0-ohm resistor and a 4.0-ohm resistor are connected in series with a 12-volt battery. If the current through the 2.0-ohm resistor is 2.0 amperes, the current through the 4.0-ohm resistor is
 - 1) 1.0 A
 - 2) 2.0 A
 - 3) 3.0 A
 - 4) 4.0 A
3. In the circuit shown below, voltmeter V_2 reads 80. volts.



What is the reading of voltmeter V_1 ?

- 1) 160 V
 - 2) 80. V
 - 3) 40. V
 - 4) 20. V
4. The circuit diagram below represents four resistors connected to a 12-volt source.



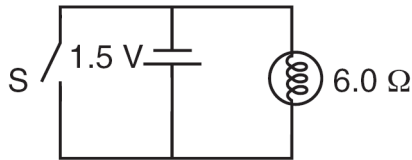
What is the total current in the circuit?

- 1) 0.50 A
- 2) 2.0 A
- 3) 8.6 A
- 4) 24 A

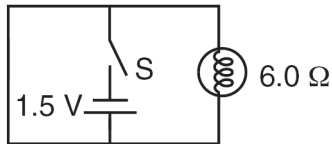
Series & Parallel Practice

5. A 6.0-ohm lamp requires 0.25 ampere of current to operate. In which circuit below would the lamp operate correctly when switch S is closed?

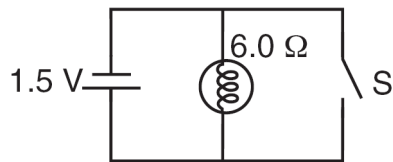
1)



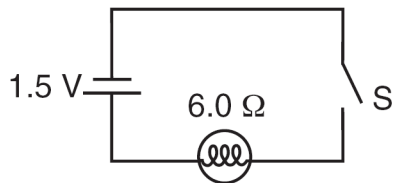
2)



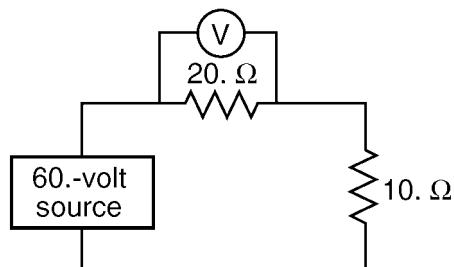
3)



4)



6. In the circuit represented by the diagram below, what is the reading of voltmeter V ?



1) 20. V

3) 30. V

2) 2.0 V

4) 40. V

7. Three resistors, 4 ohms, 6 ohms, and 8 ohms, are connected in parallel in an electric circuit. The equivalent resistance of the circuit is

1) less than 4 Ω

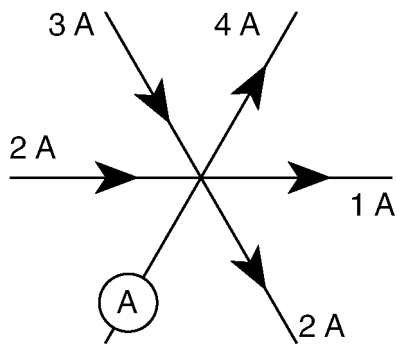
3) between 10 Ω and 18 Ω

2) between 4 Ω and 8 Ω

4) 18 Ω

Series & Parallel Practice

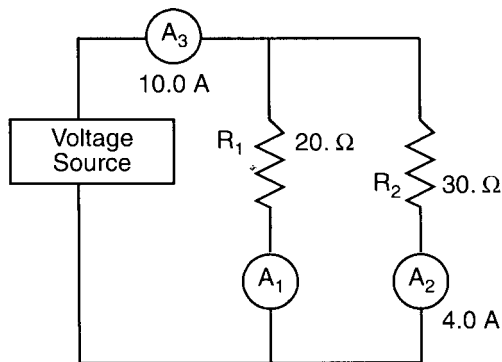
8. The diagram below represents currents in a segment of an electric circuit.



What is the reading of ammeter A ?

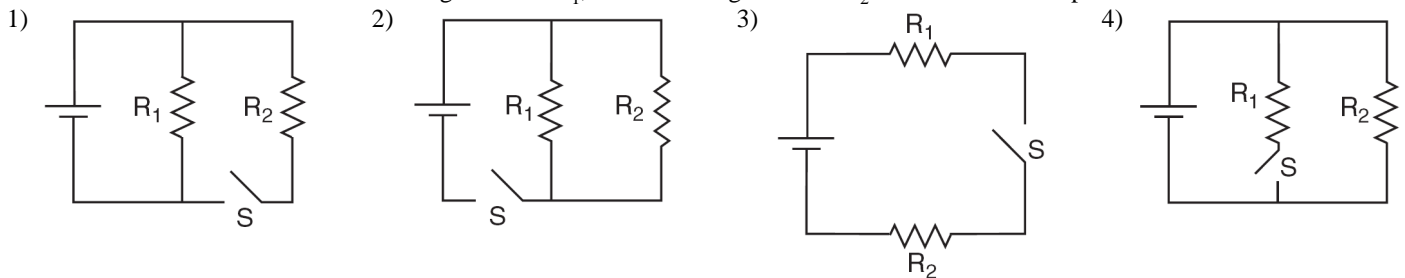
- | | |
|--------|--------|
| 1) 1 A | 3) 3 A |
| 2) 2 A | 4) 4 A |

Base your answers to questions **9** and **10** on the diagram below, which shows two resistors and three ammeters connected to a voltage source.



9. What is the current reading of ammeter A_1 ?
- | | |
|-----------|----------|
| 1) 10.0 A | 3) 3.0 A |
| 2) 6.0 A | 4) 4.0 A |
10. What is the potential difference across the source?
- | | |
|----------|----------|
| 1) 440 V | 3) 120 V |
| 2) 220 V | 4) 60. V |

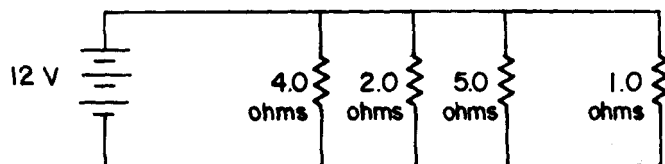
11. In which circuit would current flow through resistor R_1 , but *not* through resistor R_2 while switch S is open?



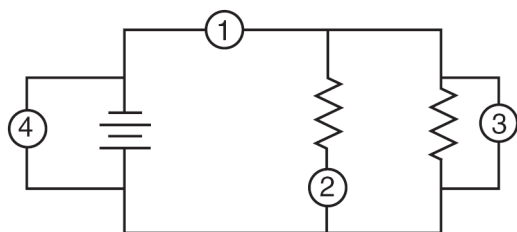
Series & Parallel Practice

12. As the number of resistors in a parallel circuit is increased, what happens to the equivalent resistance of the circuit and total current in the circuit?
- 1) Both equivalent resistance and total current decrease.
 - 2) Both equivalent resistance and total current increase.
 - 3) Equivalent resistance decreases and total current increases.
 - 4) Equivalent resistance increases and total current decreases.

13. In the circuit diagram shown below, what is the current through the 4.0-ohm resistor?

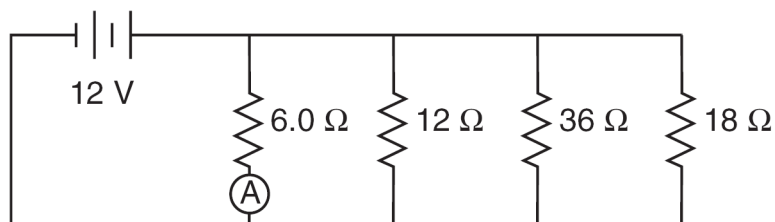


- 1) 1.0 ampere
 - 2) 0.33 ampere
 - 3) 3.0 amperes
 - 4) 48 amperes
14. In the electric circuit diagram below, possible locations of an ammeter and a voltmeter are indicated by circles 1, 2, 3, and 4



Where should an ammeter be located to correctly measure the total current and where should a voltmeter be located to correctly measure the total voltage?

- 1) ammeter at 1 and voltmeter at 4
 - 2) ammeter at 2 and voltmeter at 3
 - 3) ammeter at 3 and voltmeter at 4
 - 4) ammeter at 1 and voltmeter at 2
15. Base your answer to the following question on the diagram below, which represents an electric circuit consisting of four resistors and a 12-volt battery.



How much power is dissipated in the 36-ohm resistor?

- 1) 110 W
- 2) 48 W
- 3) 3.0 W
- 4) 4.0 W

Seies & Parallel Practice
Answer Key
Seies & Prallel Practice [Apr 09, 2015]

1. 1

2. 2

3. 1

4. 1

5. 4

6. 4

7. 1

8. 2

9. 2

10. 3

11. 1

12. 3

13. 3

14. 1

15. 4
